

TABLE J-6. (continued)

Unadjusted Exposure Index Analyses for Psychological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index			Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low	Medium	High			
Psychopathic/ Deviate	Officer	n	127	130	123	Overall		0.545
		Number/%						
		Abnormal	9 7.1%	7 5.4%	11 8.9%	M vs. L	0.75 (0.27,2.07)	0.614
	Enlisted Flyer	Normal	118 92.9%	123 94.6%	112 91.1%	H vs. L	1.29 (0.51,3.23)	0.646
		n	54	65	57	Overall		0.593
		Number/%						
		Abnormal	8 14.8%	11 16.9%	6 10.5%	M vs. L	1.17 (0.43,3.16)	0.806
	Enlisted Groundcrew	Normal	46 85.2%	54 83.1%	51 89.5%	H vs. L	0.68 (0.22,2.10)	0.574
		n	154	163	141	Overall		0.220
		Number/%						
Schizophrenia	Officer	Abnormal	25 16.2%	18 11.0%	25 17.7%	M vs. L	0.64 (0.33,1.23)	0.192
		Normal	129 83.8%	145 89.0%	116 82.3%	H vs. L	1.11 (0.61,2.04)	0.758
		n	127	130	123	Overall		0.546
	Enlisted Flyer	Number/%						
		Abnormal	5 3.9%	4 3.1%	2 1.6%	M vs. L	0.78 (0.20,2.95)	0.747
		Normal	122 96.1%	126 96.9%	121 98.4%	H vs. L	0.40 (0.08,2.12)	0.447
	Enlisted Groundcrew	n	54	65	57	Overall		0.519
		Number/%						
		Abnormal	8 14.8%	6 9.2%	5 8.8%	M vs. L	0.59 (0.19,1.80)	0.400
		Normal	46 85.2%	59 90.8%	52 91.2%	H vs. L	0.55 (0.17,1.81)	0.385
		n	154	163	141	Overall		0.600
		Number/%						
		Abnormal	18 11.7%	25 15.3%	21 14.9%	M vs. L	1.37 (0.71,2.62)	0.413
		Normal	136 88.3%	138 84.7%	120 85.1%	H vs. L	1.32 (0.67,2.60)	0.492

TABLE J-6. (continued)

Unadjusted Exposure Index Analyses for Psychological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low		Medium		High				
Social Introversion	Officer	n	127		130		123		Overall		0.385
		Number/%									
		Abnormal	1	0.8%	2	1.5%	0	0.0%	M vs. L	1.97 (0.18,21.99)	0.999
		Normal	126	99.2%	128	98.5%	123	100.0%	H vs. L	0.34 (0.01,8.46)*	0.999
	Enlisted Flyer	n	54		65		57		Overall		0.696
		Number/%									
		Abnormal	2	3.7%	1	1.5%	1	1.8%	M vs. L	0.41 (0.04,4.61)	0.590
		Normal	52	96.3%	64	98.5%	56	98.2%	H vs. L	0.46 (0.04,5.27)	0.611
	Enlisted Groundcrew	n	154		163		141		Overall		0.635
		Number/%									
		Abnormal	8	5.2%	5	3.1%	6	4.3%	M vs. L	0.58 (0.19,1.81)	0.403
		Normal	146	94.8%	158	96.9%	135	95.7%	H vs. L	0.81 (0.27,2.40)	0.788
Validity	Officer	n	127		130		123		Overall		0.052
		Number/%									
		>0	32	25.2%	34	26.2%	18	14.6%	M vs. L	1.05 (0.60,1.84)	0.887
		0	95	74.8%	96	73.8%	105	85.4%	H vs. L	0.51 (0.27,0.97)	0.041
	Enlisted Flyer	n	55		65		57		Overall		0.310
		Number/%									
		Abnormal	10	18.2%	8	12.3%	13	22.8%	M vs. L	0.63 (0.23,1.73)	0.445
		Normal	45	81.8%	57	87.7%	44	77.2%	H vs. L	1.33 (0.53,3.35)	0.642
	Enlisted Groundcrew	n	154		163		142		Overall		0.802
		Number/%									
		>0	34	22.1%	39	23.9%	36	25.4%	M vs. L	1.11 (0.66,1.87)	0.790
		0	120	77.9%	124	76.1%	106	74.6%	H vs. L	1.20 (0.70,2.05)	0.584

TABLE J-6. (continued)

Unadjusted Exposure Index Analyses for Psychological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index			Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low	Medium	High			
Total Cornell Medical Index	Officer	n	126	128	123	Overall		0.049
		Mean**	7.99	8.55	10.04	M vs. L	--	0.506
		95% C.I.**	(6.84, 9.31)	(7.52, 9.69)	(8.99, 11.20)	H vs. L	--	0.018
	Enlisted Flyer	n	53	65	56	Overall		0.906
		Mean**	13.69	13.13	13.96	M vs. L	--	0.784
		95% C.I.**	(10.63, 17.56)	(11.16, 15.42)	(11.51, 16.88)	H vs. L	--	0.906
	Enlisted Groundcrew	n	153	159	137	Overall		0.304
		Mean**	14.46	13.03	14.92	M vs. L	--	0.252
		95% C.I.**	(12.64, 16.52)	(11.57, 14.65)	(13.05, 17.05)	M vs. L	--	0.745
M-R Subscore	Officer	n	125	128	121	Overall		0.247
		Number/%						
		>0	41 32.8%	37 28.9%	47 38.8%	M vs. L	0.83 (0.49, 1.42)	0.586
	Enlisted Flyer	0	84 67.2%	91 71.1%	74 61.2%	H vs. L	1.30 (0.77, 2.19)	0.353
		n	53	65	56	Overall		0.400
		Number/%						
		Abnormal	22 41.5%	35 53.8%	26 46.4%	M vs. L	1.64 (0.79, 3.42)	0.200
	Enlisted Groundcrew	Normal	31 58.5%	30 46.2%	30 53.6%	H vs. L	1.22 (0.57, 2.61)	0.700
		n	154	157	139	Overall		0.592
		Number/%						
		>0	91 59.1%	87 55.4%	74 53.2%	M vs. L	0.86 (0.55, 1.35)	0.567
	Enlisted Groundcrew	0	63 40.9%	70 44.6%	65 46.8%	H vs. L	0.79 (0.50, 1.25)	0.346

TABLE J-6. (continued)

Unadjusted Exposure Index Analyses for Psychological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index			Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low	Medium	High			
A-H Area Subscore	Officer	n	113	112	114	Overall		0.980
		Number/%						
		>0	57 50.4%	56 50.0%	56 49.1%	M vs. L	0.98 (0.58,1.66)	0.999
	Enlisted Flyer	0	56 49.6%	56 50.0%	58 50.9%	H vs. L	0.95 (0.56,1.60)	0.895
		n	50	60	50	Overall		0.946
		Number/%						
		>0	33 66.0%	39 65.0%	34 68.0%	M vs. L	0.96 (0.43,2.11)	0.999
	Enlisted Groundcrew	0	17 34.0%	21 35.0%	16 32.0%	H vs. L	1.10 (0.48,2.52)	0.999
		n	136	150	129	Overall		0.557
		Number/%						
		>0	93 68.4%	96 64.0%	90 69.8%	M vs. L	0.82 (0.50,1.34)	0.455
	Enlisted Groundcrew	0	43 31.6%	54 36.0%	39 30.2%	H vs. L	1.07 (0.63,1.80)	0.894
HRB Impairment Index	Officer	n	126	130	121	Overall		0.401
		Number/%						
		Abnormal	29 23.0%	31 23.9%	21 17.4%	M vs. L	1.05 (0.59,1.87)	0.884
	Enlisted Flyer	Normal	97 77.0%	99 76.1%	100 82.6%	H vs. L	0.70 (0.38,1.32)	0.342
		n	52	65	57	Overall		0.253
		Number/%						
		Abnormal	20 38.5%	35 53.9%	27 47.4%	M vs. L	1.87 (0.89,3.92)	0.136
	Enlisted Groundcrew	Normal	32 61.5%	30 46.1%	30 52.6%	H vs. L	1.44 (0.67,3.09)	0.439
		n	153	163	139	Overall		0.272
		Number/%						
		Abnormal	64 41.8%	72 44.2%	49 35.3%	M vs. L	1.10 (0.71,1.72)	0.733
	Enlisted Groundcrew	Normal	89 58.2%	91 55.8%	90 64.7%	H vs. L	0.76 (0.47,1.22)	0.280

*Estimated relative risk and confidence interval calculated after adding 0.5 to each cell.

**Converted from log (X+1) scale, where X was the number of questions answered "yes."

--No relative risk given for Total Cornell Medical Index, which was analyzed as a continuous variable.

TABLE J-7.

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Anxiety	Exposure Index-by- Race (Enlisted Groundcrew)	Nonblack	n	138		149		128		Overall		0.932*
			Number/%									
			Abnormal	14	10.1%	16	10.7%	12	9.4%	M vs. L	1.07 (0.50,2.27)*	0.999*
		Normal	124	89.9%	133	89.3%	116	90.6%	H vs. L	0.92 (0.41,2.06)*	0.999*	
		Black	n	16		14		13		Overall		0.074*
			Number/%									
			Abnormal	5	31.3%	2	14.3%	0	0.0%	M vs. L	0.37 (0.06,2.29)*	0.399*
			Normal	11	68.7%	12	85.7%	13	100.0%	H vs. L	0.08 (0.004,1.56)**	0.048*
Denial	Exposure Index-by- Age (Officer)		Born >=1942	n	43		22		11		Overall	
		Number/%										
		Abnormal		2	4.7%	0	0.0%	0	0.0%	M vs. L	0.37 (0.02,8.02)**	0.545*
		Normal	41	95.3%	22	100.0%	11	100.0%	H vs. L	0.72 (0.03,16.12)**	0.999*	
		Born 1923- 1941(a)	n	79		93		109		Overall		0.337
			Number/%									
			Abnormal	3	3.8%	1	1.1%	1	0.9%	M vs. L	0.27 (0.03,2.61)	0.255
			Normal	76	96.2%	92	98.9%	108	99.1%	H vs. L	0.25 (0.03,2.49)	0.238
Born <=1922	n		5		15		3		Overall		0.558*	
	Number/%											
	Abnormal	1	20.0%	1	6.7%	0	0.0%	M vs. L	0.29 (0.01,5.66)*	0.447*		
	Normal	4	80.0%	14	93.3%	3	100.0%	H vs. L	0.43 (0.01,14.08)**	0.999*		

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Depression	Exposure Index-by- Race (Enlisted Groundcrew)	Nonblack	n	138		149		128		Overall		0.856*
			Number/%									
			Abnormal	21	15.2%	20	13.4%	20	15.6%	M vs. L	0.86 (0.45,1.67)*	0.737*
		Normal	117	84.8%	129	86.6%	108	84.4%	H vs. L	1.03 (0.53,2.01)*	0.999*	
		Black	n	16		14		13		Overall		0.092*
			Number/%									
Abnormal	4		25.0%	1	7.1%	0	0.0%	M vs. L	0.23 (0.02,2.37)*	0.336*		
Normal	12	75.0%	13	92.9%	13	100.0%	H vs. L	0.10 (0.01,2.11)**	0.107*			
Hypochondria	Exposure Index-by- Education (Officer)	High School	n	11		17		24		Overall		0.011*
			Number/%									
			Abnormal	4	36.4%	3	17.7%	0	0.0%	M vs. L	0.38 (0.07,2.16)*	0.381*
		Normal	7	63.6%	14	82.3%	24	100.0%	H vs. L	0.03 (0.002,0.71)**	0.006*	
		College	n	116		113		99		Overall		0.120*
			Number/%									
Abnormal	6		5.2%	3	2.7%	9	9.1%	M vs. L	0.50 (0.12,2.05)*	0.499*		
Normal	110	94.8%	110	97.3%	90	90.9%	H vs. L	1.83 (0.63,5.34)*	0.293*			
Hypochondria	Exposure Index-by- Race (Enlisted Groundcrew)	Nonblack	n	134		146		119				
			Number/%									
			Abnormal	17	12.7%	15	10.3%	25	21.0%	M vs. L	0.82 (0.39,1.74)	0.606
		Normal	117	87.3%	131	89.7%	94	79.0%	H vs. L	1.67 (0.83,3.33)	0.148	
		Black	n	14		14		12				
			Number/%									
Abnormal	6		42.9%	3	21.4%	1	8.3%	M vs. L	0.31 (0.06,1.70)	0.179		
Normal	8	57.1%	11	78.6%	11	91.7%	H vs. L	0.10 (0.01,1.02)	0.052			

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Hysteria	Exposure Index-by- Education (Officer)	High School	n	11		17		24		Overall		0.129*
			Number/%									
			Abnormal	2	18.2%	2	11.8%	0	0.0%	M vs. L	0.60 (0.07,5.03)*	0.999*
		Normal	9	81.8%	15	88.2%	24	100.0%	H vs. L	0.08 (0.003,1.77)**	0.092*	
		College(b)	n	116		113		99		Overall		0.025
			Number/%									
Abnormal	5		4.3%	7	6.2%	14	14.1%	M vs. L	1.17 (0.35,3.92)	0.795		
Normal	111	95.7%	106	93.8%	85	85.9%	H vs. L	3.49 (1.17,10.32)	0.024			
Hysteria	Exposure Index-by- Race (Enlisted Groundcrew)	Nonblack	n	138		149		128		Overall		0.029*
			Number/%									
			Abnormal	23	16.7%	13	8.7%	25	19.5%	M vs. L	0.48 (0.23,0.99)*	0.050*
		Normal	115	83.3%	136	91.3%	103	80.5%	H vs. L	1.21 (0.65,2.27)*	0.633*	
		Black	n	16		14		13		Overall		0.094*
			Number/%									
Abnormal	5		31.2%	3	21.4%	0	0.0%	M vs. L	0.60 (0.11,3.15)*	0.689*		
Normal	11	68.8%	11	78.6%	13	100.0%	H vs. L	0.08 (0.004,1.56)**	0.048*			
Mania/ Hypomania	Exposure Index-by- Drink-years (Officer)	0	n	5		0		6		Overall		—
			Number/%									
			Abnormal	0	0.0%	—		0	0.0%	M vs. L	—	—
		Normal	5	100.0%	—		6	100.0%	H vs. L	—	—	
		0-50	n	105		109		92		Overall		0.207*
			Number/%									
			Abnormal	8	7.6%	5	4.6%	2	2.2%	M vs. L	0.58 (0.18,1.84)*	0.402*
		Normal	97	92.4%	104	95.4%	90	97.8%	H vs. L	0.27 (0.06,1.30)*	0.108*	
		>50	n	15		18		22		Overall		0.016*
Number/%												
Abnormal	0		0.0%	0	0.0%	5	22.7%	M vs. L	—	—		
Normal	15	100.0%	18	100.0%	17	77.3%	H vs. L	9.74 (0.50,190.8)**	0.067*			

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Masculinity/ Femininity	Exposure Index-by- Education (Officer)	High School	n	11		16		24				
			Number/%									
			Abnormal	1	9.1%	4	25.0%	1	4.2%	M vs. L	5.96 (0.53,67.59)	0.150
		Normal	10	90.9%	12	75.0%	23	95.8%	H vs. L	0.33 (0.02,6.55)	0.467	
		College	n	114		110		96				
			Number/%									
Abnormal	6		5.3%	11	10.0%	13	13.5%	M vs. L	3.03 (1.01,9.08)	0.048		
Normal	108	94.7%	99	90.0%	83	86.5%	H vs. L	4.48 (1.49,13.44)	0.008			
Paranoia	Exposure Index-by- Age (Officer)	Born ≥1942	n	43		22		11		Overall		0.288*
			Number/%									
			Abnormal	0	0.0%	1	4.5%	0	0.0%	M vs. L	6.07 (0.24,155.30)**	0.338*
		Normal	43	100.0%	21	95.5%	11	100.0%	H vs. L	—	—	
		Born <1942	n	84		108		112		Overall		0.106*
			Number/%									
Abnormal	1		1.2%	0	0.0%	4	3.6%	M vs. L	0.26 (0.01,6.38)**	0.437*		
Normal	83	98.8%	108	100.0%	108	96.4%	H vs. L	3.07 (0.34,28.02)*	0.394*			
Paranoia	Exposure Index-by- Age (Enlisted Flyer)	Born ≥1942	n	11		18		9		Overall		0.565*
			Number/%									
			Abnormal	0	0.0%	1	5.6%	0	0.0%	M vs. L	1.97 (0.07,52.71)**	0.999*
		Normal	11	100.0%	17	94.4%	9	100.0%	H vs. L	—	—	
		Born <1942	n	43		47		48		Overall		0.195*
			Number/%									
Abnormal	3		7.0%	0	0.0%	3	6.3%	M vs. L	0.12 (0.01,2.43)**	0.105*		
Normal	40	93.0%	47	100.0%	45	93.7%	H vs. L	0.89 (0.17,4.66)*	0.999*			

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Paranoia	Exposure Index-by- Race (Enlisted Groundcrew)	Nonblack	n	138		149		128		Overall		0.348*
			Number/%									
			Abnormal	3	2.2%	5	3.4%	7	5.5%	M vs. L	1.56 (0.37,6.66)*	0.724
		Normal	135	97.8%	144	96.6%	121	94.5%	H vs. L	2.60 (0.66,10.30)*	0.204*	
		Black	n	16		14		13		Overall		0.422*
			Number/%									
Abnormal	2		12.5%	1	7.1%	0	0.0%	M vs. L	0.54 (0.04,6.67)*	0.999*		
		Normal	14	87.5%	13	92.9%	13	100.0%	H vs. L	0.22 (0.01,4.89)**	0.488*	
Psychopathic/ Deviate	Exposure Index-by- Education (Enlisted Groundcrew)	High School	n	110		131		108		Overall		
			Number/%									
			Abnormal	16	14.5%	15	11.5%	24	22.2%	M vs. L	0.75 (0.35,1.64)	0.475
		Normal	94	85.5%	116	88.5%	84	77.8%	H vs. L	1.50 (0.72,3.09)	0.278	
		College	n	38		29		23		Overall		
			Number/%									
Abnormal	8		21.1%	3	10.3%	1	4.3%	M vs. L	0.52 (0.12,2.23)	0.377		
		Normal	30	78.9%	26	89.7%	22	95.7%	H vs. L	0.12 (0.01,1.11)	0.062	

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Total OMI		0	n	5	0	6	M vs. L	(c)	—
			Adj. Mean	4.01	—	6.87	M vs. L	(c)	0.228
			95% C.I.	(1.77, 8.06)	—	(3.57, 12.53)			
	Exposure Index-by- Drink-years (Officer Enlisted)	0-50	n	104	107	92	M vs. L	(c)	0.964
			Adj. Mean	6.95	6.98	8.40	H vs. L	(c)	0.058
			95% C.I.	(5.10, 9.37)	(5.13, 9.39)	(6.19, 11.29)			
		>50	n	15	17	22	M vs. L	(c)	0.007
			Adj. Mean	13.74	7.17	9.27	H vs. L	(c)	0.080
			95% C.I.	(8.91, 20.92)	(4.68, 10.75)	(6.34, 13.36)			

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Total OMI		High School 0	n	2	4	4	M vs. L	(c)	0.018
			Adj. Mean	4.00	17.79	11.32	M vs. L	(c)	0.106
			95% C.I.	(1.01,11.48)	(8.68,35.49)	(5.31, 23.09)			
		High School 0-50	n	25	36	27	M vs. L	(c)	0.191
			Adj. Mean	16.06	12.68	10.87	M vs. L	(c)	0.045
			95% C.I.	(11.23,22.81)	(9.27,17.23)	(7.82, 14.97)			
	Exposure Index-by- Education	High School >50	n	14	10	11	M vs. L	(c)	0.509
			Adj. Mean	16.32	19.64	18.27	M vs. L	(c)	0.680
			95% C.I.	(10.59,24.87)	(12.38,30.85)	(11.68, 28.27)			
		College 0	n	1	1	0	M vs. L	(c)	0.049
			Adj. Mean	0.84	10.17	—	M vs. L	(c)	—
			95% C.I.	(0,5.66)	(2.13,38.86)	—			
	Exposure Index-by- Drink-Years (Enlisted Flyer)	College 0-50	n	6	10	8	M vs. L	(c)	0.100
			Adj. Mean	6.43	11.84	11.92	M vs. L	(c)	0.112
			95% C.I.	(3.25,11.97)	(7.33,18.81)	(7.06 19.72)			
		College >50	n	0	0	1	M vs. L	(c)	—
			Adj. Mean	—	—	20.55	M vs. L	(c)	—
			95% C.I.	—	—	(5.04, 75.84)			

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
M-R Subscore	Exposure Index-by- Drink-years (Enlisted Flyer	0	n	3		5		4		Overall		0.060*
			Number/%									
			>0	0	0.0%	4	80.0%	3	75.0%	M vs. L	21.00 (0.64,690.0)**	0.143*
			0	3	100.0%	1	20.0%	1	25.0%	H vs. L	16.33 (0.48,555.6)**	0.143*
		0-50(a)	n	31		46		35		Overall		0.054
			Number/%									
			>0	12	38.7%	25	54.3%	10	28.6%	M vs. L	1.98 (0.77,5.09)	0.158
			0	19	61.3%	21	45.7%	25	71.4%	H vs. L	0.65 (0.23,1.83)	0.410
		>50(a)	n	14		10		12		Overall		0.440
			Number/%									
			>0	7	50.0%	5	50.0%	9	75.0%	M vs. L	1.00 (0.20,5.07)	1.000
			0	7	50.0%	5	50.0%	3	25.0%	H vs. L	2.67 (0.49,14.46)	0.255

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index				Contrast	Adj. Relative Risk (95% C.I.)	p-Value			
				Low	Medium		High						
A-H Area Subscore		High School 0 Drink-years	n	2	4		4		Overall		0.007*		
			Number/%										
			Abnormal	0	0.0	4	100.0	4	100.0	M vs. L	45.00 (0.67,3043)**	0.067*	
			Normal	2	100.0	0	0.0	0	0.0	H vs. L	45.00 (0.67,3043)**	0.067*	
		High School 0-50 Drink-years	n	22	33		22		Overall		0.035*		
			Number/%										
			Abnormal	18	81.8	18	54.5	10	45.5	M vs. L	0.27 (0.07,0.96)*	0.047*	
			Normal	4	18.2	15	45.5	12	54.5	Y vs. L	0.19 (0.05,0.73)*	0.027*	
		Exposure Index-by- Education	High School >50 Drink-years	n	14	9		11		Overall		0.583*	
			Number/%										
			Abnormal	10	71.4	8	88.9	9	81.8	M vs. L	3.20 (0.30,34.59)*	0.611*	
			Normal	4	28.6	1	11.1	2	18.2	H vs. L	1.80 (0.26,12.30)*	0.661*	
		Index-by- Drink-years (Enlisted Flyer)	Exposure 0 Drink-years	College	n	0	1		1		Overall		—
				Abnormal	0	—	0	0.0	0	0.0	M vs. L	—	—
				Normal	0	—	1	100.0	1	100.0	H vs. L	—	—
College 0-50 Drink-years	n		6	10		7		Overall		0.115*			
	Number/%												
	Abnormal		1	16.7	6	60.0	5	71.4	M vs. L	7.50 (0.62,90.65)*	0.145*		
	Normal		5	83.3	4	40.0	2	28.6	H vs. L	12.50 (0.84,186.30)*	0.103*		
College >50 Drink-years	n	0	0		1		Overall		—				
	Number/%												
	Abnormal	0	—	0	—	1	100.0	M vs. L	—	—			
	Normal	0	—	0	—	0	0.0	H vs. L	—	—			

TABLE J-7. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Psychological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
HRB Impairment Index	Exposure Index-by- Race (Enlisted Groundcrew)	Nonblack	n	132		144		115				
			Number/%									
			Abnormal	48	36.4%	59	41.0%	40	34.8%	M vs. L	1.88 (1.09,3.25)	0.024
			Normal	84	63.6%	85	59.0%	75	65.2%	H vs. L	0.77 (0.43,1.40)	0.400
		Black	n	13		14		12				
			Number/%									
			Abnormal	11	84.6%	10	71.4%	3	25.0%	M vs. L	0.39 (0.05,2.72)	0.340
			Normal	2	15.4%	4	28.6%	9	75.0%	H vs. L	0.06 (0.01,0.44)	0.006

*Unadjusted estimate of relative risk and confidence interval, or p-value, based on stratified tables.

**Unadjusted estimate of relative risk and confidence interval calculated after adding 0.5 to each cell.

(a)Results have been adjusted for education.

(b)Results have been adjusted for age.

—Zero counts in cells do not allow for calculation of percent, relative risk, confidence interval, or p-value.

(c)No relative risk given for total OMI, which was analyzed continuously.

Note: Small sample sizes may affect validity of overall p-value.

Note: Results without (*) or (**) are adjusted for all other main effects in model (age, race, education, drink-years, and combat index [for MMPI variables]), unless otherwise noted.

Note: Participants judged to have PTSD are eliminated from analysis of Total OMI, Section M-R Subscore, Section A-H Area Subscore, and HRB Impairment Index.

TABLE J-8.

**Unadjusted Analyses for Reported Psychological Illnesses by Group:
Baseline and First Followup Studies Combined*
(Original Comparisons Only)**

Type of Illness	Group Abnormalities				Total	p-Value**
	Ranch Hand		Original Comparison			
	Number	Percent	Number	Percent		
Psychoses	14	1.4	8	0.8	22	0.289
Alcohol Dependence	9	0.9	4	0.4	13	0.268
Anxiety	7	0.7	8	0.8	15	0.798
Other Neuroses	72	7.1	46	4.8	118	0.037

*Analyses based on 1,016 Ranch Hands and 955 Original Comparisons; some participants had more than one illness.

**Fisher's exact test.

TABLE J-9.

**Summary of Kolmogorov-Smirnov Tests on MMPI for Officers
(Original Comparisons Only)**

Parameter*	Group	Mean Score	Standard Deviation	Kolmogorov- Smirnov p-Value
Anxiety	Ranch Hand	52.82	7.38	0.328
	Original Comparison	53.22	7.06	
Consistency	Ranch Hand	49.23	6.92	0.995
	Original Comparison	49.02	5.50	
Defensiveness	Ranch Hand	49.64	6.64	0.822
	Original Comparison	49.69	7.14	
Denial	Ranch Hand	59.47	7.31	0.901
	Original Comparison	59.46	7.40	
Depression	Ranch Hand	55.11	10.17	0.975
	Original Comparison	54.86	9.38	
Hypochondria	Ranch Hand	55.60	8.85	0.990
	Original Comparison	54.96	8.09	
Hysteria	Ranch Hand	60.45	7.00	0.711
	Original Comparison	59.79	6.81	
Mania/Hypomania	Ranch Hand	54.36	8.94	0.436
	Original Comparison	53.68	9.10	
Masculinity/ Femininity	Ranch Hand	58.83	8.64	0.577
	Original Comparison	58.14	8.94	
Paranoia	Ranch Hand	53.71	7.34	0.995
	Original Comparison	53.57	6.86	
Psychopathic/ Deviate	Ranch Hand	56.82	8.87	0.644
	Original Comparison	56.61	9.65	
Schizophrenia	Ranch Hand	54.80	8.48	0.661
	Original Comparison	54.66	7.89	
Social Introversion	Ranch Hand	46.56	7.43	0.627
	Original Comparison	47.13	7.60	
Validity	Ranch Hand	0.93	3.11	0.594
	Original Comparison	0.80	2.86	

*n=380 Ranch Hands; n=350 Original Comparisons.

TABLE J-10.

**Summary of Kolmogorov-Smirnov Tests on MMPI for Enlisted Flyers
(Original Comparisons Only)**

Parameter*	Group	Mean Score	Standard Deviation	Kolmogorov- Smirnov p-Value
Anxiety	Ranch Hand	54.78	9.73	0.993
	Original Comparison	54.16	8.78	
Consistency	Ranch Hand	52.24	10.30	0.923
	Original Comparison	51.41	8.15	
Defensiveness	Ranch Hand	53.05	7.96	0.353
	Original Comparison	52.09	8.34	
Denial	Ranch Hand	55.95	8.73	0.760
	Original Comparison	56.81	8.44	
Depression	Ranch Hand	58.21	11.79	0.760
	Original Comparison	57.27	10.35	
Hypochondria	Ranch Hand	58.48	12.16	0.577
	Original Comparison	58.44	11.71	
Hysteria	Ranch Hand	60.00	8.94	0.465
	Original Comparison	60.70	8.77	
Mania/Hypomania	Ranch Hand	55.05	10.00	0.155
	Original Comparison	55.50	9.42	
Masculinity/ Femininity	Ranch Hand	55.79	7.85	0.877
	Original Comparison	56.22	8.39	
Paranoia	Ranch Hand	52.77	8.43	0.877
	Original Comparison	51.72	7.68	
Psychopathic/ Deviate	Ranch Hand	57.48	11.40	0.163
	Original Comparison	57.85	9.72	
Schizophrenia	Ranch Hand	56.56	13.03	0.496
	Original Comparison	56.27	10.59	
Social Introversion	Ranch Hand	50.35	8.89	0.194
	Original Comparison	49.00	7.94	
Validity	Ranch Hand	3.93	42.48	0.864
	Original Comparison	7.18	60.31	

*n=176 Ranch Hands; n=172 Original Comparisons (except for validity, where n=177 Ranch Hands and n=174 Original Comparisons).

TABLE J-11.

**Summary of Kolmogorov-Smirnov Tests on MMPI
for Enlisted Groundcrew
(Original Comparisons Only)**

Parameter*	Group	Mean Score	Standard Deviation	Kolmogorov- Smirnov p-Value
Anxiety	Ranch Hand	55.86	10.96	0.877
	Original Comparison	55.72	9.34	
Consistency	Ranch Hand	53.05	10.64	0.728
	Original Comparison	51.78	8.19	
Defensiveness	Ranch Hand	52.42	8.27	0.923
	Original Comparison	52.69	8.51	
Denial	Ranch Hand	55.53	8.57	0.112
	Original Comparison	56.80	8.72	
Depression	Ranch Hand	58.79	12.98	0.661
	Original Comparison	57.85	10.63	
Hypochondria	Ranch Hand	58.44	13.22	0.577
	Original Comparison	57.50	11.30	
Hysteria	Ranch Hand	60.36	9.80	0.644
	Original Comparison	59.75	8.84	
Mania/Hypomania	Ranch Hand	55.26	9.78	0.822
	Original Comparison	55.69	9.72	
Masculinity/ Femininity	Ranch Hand	56.18	8.24	0.304
	Original Comparison	57.24	8.49	
Paranoia	Ranch Hand	53.12	9.05	0.340
	Original Comparison	53.73	8.48	
Psychopathic/ Deviate	Ranch Hand	59.01	11.29	0.644
	Original Comparison	59.34	10.70	
Schizophrenia	Ranch Hand	58.20	14.22	0.328
	Original Comparison	57.58	10.64	
Social Introversion	Ranch Hand	51.86	9.82	0.353
	Original Comparison	50.99	8.63	
Validity	Ranch Hand	1.97	26.48	0.999
	Original Comparison	0.97	5.41	

*n=458 Ranch Hands; n=430 Original Comparisons (except for validity, where n=459 Ranch Hands and n=431 Original Comparisons).

TABLE J-12.

**Summary of Kolmogorov-Smirnov Tests on CMI
(Original Comparisons Only)**

Stratification	Group	Sample Size	Mean Score	Standard Deviation	Kolmogorov-Smirnov p-Value
<u>Age</u>					
Born ≥ 1942	Ranch Hand	402	15.88	15.21	<0.001
	Original Comparison	366	12.95	11.57	
Born 1923-1941	Ranch Hand	562	15.49	12.99	0.776
	Original Comparison	528	14.55	11.88	
Born ≤ 1922	Ranch Hand	36	18.56	15.94	0.980
	Original Comparison	45	16.47	9.28	
<u>Race</u>					
Nonblack	Ranch Hand	941	15.63	13.83	0.038
	Original Comparison	882	13.96	11.47	
Black	Ranch Hand	59	17.81	16.91	0.561
	Original Comparison	57	14.82	14.62	
<u>Education</u>					
High School	Ranch Hand	556	18.88	15.80	<0.001
	Original Comparison	524	15.62	13.12	
College	Ranch Hand	444	11.85	10.18	0.577
	Original Comparison	415	11.99	9.16	
<u>Current Alcohol Use</u>					
Drinker	Ranch Hand	851	15.16	13.12	0.170
	Original Comparison	812	13.77	11.32	
Nondrinker	Ranch Hand	148	18.84	17.71	0.162
	Original Comparison	127	15.61	13.69	
<u>Occupation</u>					
Officer	Ranch Hand	377	11.23	9.01	0.970
	Original Comparison	345	10.99	7.53	
Enlisted Flyer	Ranch Hand	174	17.72	14.84	0.270
	Original Comparison	170	15.31	12.51	
Enlisted Groundcrew	Ranch Hand	449	18.80	16.06	0.003
	Original Comparison	424	15.96	13.48	

TABLE J-13.

**Unadjusted Analyses for MMPI by Group
(Original Comparisons Only)**

Variable	Statistic	Group				Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand		Original Comparison			
		Number	Percent	Number	Percent		
Anxiety	n	1,014		952		1.43 (0.98,2.08)	0.062
	Abnormal	73	7.2	49	5.1		
	Normal	941	92.8	903	94.9		
Consistency	n	1,014		952		1.56 (0.91,2.67)	0.111
	Abnormal	36	3.6	22	2.3		
	Normal	978	96.4	930	97.7		
Defensiveness	n	1,014		952		0.71 (0.41,1.24)	0.265
	Abnormal	23	2.3	30	3.2		
	Normal	991	97.7	922	96.8		
Denial	n	1,014		952		0.42 (0.24,0.75)	0.003
	Abnormal	17	1.7	37	3.9		
	Normal	997	98.3	915	96.1		
Depression	n	1,014		952		1.26 (0.94,1.69)	0.136
	Abnormal	114	11.2	87	9.1		
	Normal	900	88.8	865	90.9		
Hypochondria	n	1,014		952		1.26 (0.94,1.68)	0.125
	Abnormal	119	11.7	91	9.6		
	Normal	895	88.3	861	90.4		
Hysteria	n	1,014		952		1.34 (1.00,1.79)	0.050
	Abnormal	123	12.1	89	9.4		
	Normal	891	87.9	863	90.6		

TABLE J-13. (continued)

Unadjusted Analyses for MMPI by Group
(Original Comparisons Only)

Variable	Statistic	Group		Original Comparison		Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand Number	Percent	Number	Percent		
Mania/Hypomania	n	1,014		952			
	Abnormal	63	6.2	56	5.9	1.06 (0.73,1.54)	0.777
	Normal	951	93.8	896	94.1		
Masculinity/ Femininity	n	1,014		952			
	Abnormal	66	6.5	83	8.7	0.73 (0.52,1.02)	0.073
	Normal	948	93.5	869	91.3		
Paranoia	n	1,014		952			
	Abnormal	31	3.1	17	1.8	1.73 (0.95,3.16)	0.079
	Normal	983	96.9	935	98.2		
Psychopathic/ Deviate	n	1,014		952			
	Abnormal	120	11.8	104	10.9	1.09 (0.83,1.45)	0.570
	Normal	894	88.2	848	89.1		
Schizophrenia	n	1,014		952			
	Abnormal	94	9.3	71	7.5	1.27 (0.92,1.75)	0.166
	Normal	920	90.7	881	92.5		
Social Introversion	n	1,014		952			
	Abnormal	26	2.6	14	1.5	1.76 (0.92,3.40)	0.109
	Normal	988	97.4	938	98.5		
Validity	n	1,016		955			
	>0	224	22.0	198	20.7	1.08 (0.87,1.34)	0.510
	0	792	78.0	757	79.3		

TABLE J-14.

**Adjusted Analyses for MMPI by Group
(Original Comparisons Only)**

Variable	Group		Adj. Relative Risk (95% C.I.)	p-Value	Covariate Remarks*
	Ranch Hand Total	Original Comparison Total			
Anxiety	1,012	950	1.39 (0.95,2.05)	0.092	EDUC (p<0.001) AGE*CI (p=0.010)
Consistency	976	926	****	****	AGE (p=0.025) RACE*DRKYR (p=0.024) GRP*EDUC (p=0.034)
Defensiveness	976	926	0.68 (0.38,1.19)	0.175	EDUC (p<0.001) AGE*DRKYR (p=0.043)
Denial	974	924	0.43 (0.23,0.80)	0.006	AGE*DRKYR (p=0.026) EDUC*CI (p=0.040)
Depression	1,014	952	1.26 (0.94,1.70)	0.120	EDUC (p<0.001)
Hypochondria	1,014	952	1.29 (0.96,1.72)	0.091	AGE (p=0.005) EDUC (p<0.001)
Hysteria	1,014	952	1.37 (1.02,1.83)	0.033	AGE (p=0.001) EDUC (p<0.001)
Mania/Hypomania	974	924	0.97 (0.66,1.43)	0.882	AGE (p=0.048) CI (p=0.010) DRKYR (p=0.016)

TABLE J-14. (continued)

Adjusted Analyses for MMPI by Group
(Original Comparisons Only)

Variable	Group		Adj. Relative Risk (95% C.I.)	p-Value	Covariate Remarks*
	Ranch Hand Total	Original Comparison Total			
Masculinity/ Femininity	1,014	952	0.71 (0.51,1.00)	0.047	EDUC (p<0.001) RACE*AGE (p=0.006)
Paranoia	1,012	950	****	****	AGE*CI (p=0.004) GRP*AGE (p=0.040)
Psychopathic/ Deviate	974	924	1.13 (0.84,1.52)	0.433	EDUC (p=0.010) AGE*CI (p≥0.001) RACE*DRKYR (p=0.001)
Schizophrenia	976	926	1.27 (0.91,1.77)	0.153	EDUC (p<0.001) RACE*DRKYR (p=0.003)
Social Introversion	1,014	952	1.72 (0.89,3.31)	0.099	AGE (p=0.005)
Validity	1,014	953	****	****	AGE*CI (p=0.034) GRP*RACE (p=0.016) GRP*CI (p=0.030)

*Abbreviations:

EDUC: education
 CI: combat index
 DRKYR: drink-years
 GRP: group

****Group-by-covariate interaction: adjusted relative risk, confidence interval, and p-value are not presented.

TABLE J-15.

**Unadjusted Analyses for the Cornell
Medical Index (CMI) by Group
(Original Comparisons Only)**

Variable	Statistic	Group		Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand	Original Comparison		
Total CMI	n Mean* 95% C.I.*	1,000 11.74 (11.17,12.35)	939 10.55 (10.02,11.11)	--	0.004
M-R Subscore	n Number/%	998	936	Overall	0.198
	0 (Low)	538 53.9%	531 56.7%	Medium vs. Low	
	1-10 (Medium)	408 40.9%	370 39.5%	1.09 (0.91,1.31)	0.371
	>10 (High)	52 5.2%	35 3.8%	High vs. Low 1.47 (0.99,2.29)	0.095
A-H Area Subscore	n Number/%	914	1,148	Overall	0.106
	0 (Low)	360 39.4%	375 44.1%	Medium vs. Low	
	1-3 (Medium)	449 49.1%	394 46.3%	1.19 (0.97,1.45)	0.090
	4-8 (High)	105 11.5%	82 9.6%	High vs. Low 1.33 (0.97,1.84)	0.086

*Transformed from log (X+1) scale, where X was the number of questions answered "yes."

--No relative risk given for Total CMI, which was analyzed as a continuous variable.

TABLE J-16.

Adjusted Analyses for CMI Variables by Group
(Original Comparisons Only)

Variable	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value	Covariate Remarks*
		Ranch Hand	Original Comparison			
Total CMI	n	962	913	--	****	PTSD (p<0.001)
	Adj. Mean	****	****			RACE*DRKYR (p=0.027)
	95% C.I.	****	****			AGE*EDUC (p=0.010) GRP*EDUC (p=0.002)
M-R Subscore	n	998	935	****	****	AGE (p<0.001) PTSD (p<0.001) GRP*EDUC (p=0.006)
A-H Area Subscore	n	914	850	Overall Medium vs. Low: 1.20 (0.99,1.47) High vs. Low: 1.32 (0.92,1.89)	0.108 0.063 0.132	AGE (p<0.001) EDUC (p<0.001) PTSD (p<0.001)

****Group-by-covariate interaction -- adjusted mean/relative risk, confidence interval, and p-value are not presented.

--No relative risk given for total CMI, which was analyzed as a continuous variable.

*Additional Abbreviations:

PTSD: post-traumatic stress disorder

TABLE J-17.

**Summary Results for the Halstead-Reitan
Battery Impairment Index Unadjusted and Adjusted Analyses
(Original Comparisons Only)**

Analysis	Statistic	Group				Est. Relative Risk (95% C.I).	p-Value	Covariate Remarks
		Ranch Hand		Original Comparison				
		Number	Percent	Number	Percent			
Unadjusted Analysis	n	1,006		947				
	Abnormal	348	34.6	319	33.7	1.04 (0.86,1.26)	0.703	
	Normal	658	65.4	628	66.3			
Adjusted Analysis	n	1,006		947		1.10 (0.90,1.34)	0.359	AGE (p<0.001) RACE (p<0.001) EDUC (p<0.001)

TABLE J-18.

Summary of Group-by-Covariate Interactions
for Psychological Variables
(Original Comparisons Only)

Variable	Interaction	Stratification	Statistic	Group		Original Comparison	Adj. Relative Risk (95% C.I.)	p-Value
				Ranch	Hand			
Consistency	Group-by- Education	High School	n	537		516		
			Number/%					
			Abnormal	30	5.6%	13	2.5%	2.31 (1.18,4.50)
			Normal	507	94.4%	503	97.5%	
		College	n	437		585		
			Number/%					
			Abnormal	6	1.4%	15	2.6%	0.61 (0.22,1.74)
			Normal	431	98.6%	570	97.4%	
Paranoia	Group-by- Age	Born $\geq$ 1942	n	410		545		
			Number/%					
			Abnormal	15	3.7%	19	3.5%	0.96 (0.44,2.13)
			Normal	395	96.3%	526	96.5%	
		Born <1942	n	602		740		
			Number/%					
			Abnormal	16	2.7%	9	1.2%	3.85 (1.36,10.94)
			Normal	586	97.3%	731	98.8%	

TABLE J-18. (continued)

**Summary of Group-by-Covariate Interactions
for Psychological Variables
(Original Comparisons Only)**

Variable	Interaction	Stratification	Statistic	Group				Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand		Original Comparison			
Validity	Group-by-Race	Nonblack CI=Low	n	178		353		1.49 (0.98,2.26)	0.059
			Number/%						
			>0	47	26.4%	73	20.7%		
		0	131	73.6%	280	79.3%			
		Nonblack CI=Medium	n	367		295			
			Number/%						
			>0	78	21.3%	43	14.6%		
		0	289	78.7%	252	85.4%			
		Nonblack CI=High	n	409		247			
	Number/%								
	>0		83	20.3%	57	23.1%			
	0	326	79.7%	190	76.9%				
	Group-by Combat Index	Black CI=Low	n	20		24		0.55 (0.24,1.29)	0.170
			Number/%						
			>0	6	30.0%	9	37.5%		
		0	14	70.0%	15	62.5%			
		Black CI=Medium	n	18		12			
			Number/%						
>0			6	33.3%	5	41.7%			
0		12	66.7%	7	58.3%				
Black CI=High		n	22		22				
	Number/%								
	>0	3	13.6%	11	50.0%				
0	19	86.4%	11	50.0%					

TABLE J-18. (continued)

Summary of Group-by-Covariate Interactions
for Psychological Variables
(Original Comparisons Only)

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Original Comparison		
Total OMI	Group-by- Education	High School	n	529	511	—	<0.001
			Adj. Mean* 95% C.I.*	35.50 (28.09,44.79)	29.65 (23.27,37.70)		
		College	n	433	402	—	0.498
			Adj. Mean* 95% C.I.*	22.70 (17.76,28.95)	23.49 (18.37,29.97)		
M-R Subscore	Group-by- Education	High School	n	555	521	Overall	0.015
			Number/%			Med vs. Low	
			0 (Low)	246	44.3%	281	53.9%
			1-10 (Med)	267	48.1%	213	40.9%
			>10 (High)	42	7.6%	27	5.2%
						1.42 (1.11,1.82)	0.005
		College	n	443	414	Overall	0.196
			Number/%			Med vs. Low	
			0 (Low)	292	65.9%	250	60.4%
			1-10 (Med)	141	31.8%	156	37.7%
			>10 (High)	10	2.3%	8	1.9%
						0.77 (0.58,1.02)	0.071
						0.99 (0.34,2.87)	0.991

*Converted from log (X+1) scale, where X was the number of questions answered "yes".

—No relative risk given for Total OMI, which was analyzed as a continuous variable.

APPENDIX K

Gastrointestinal Assessment

APPENDIX K: Gastrointestinal Assessment

Contents

<u>Table</u>	<u>Page</u>
K-1 Summary of Group-by-Covariate Interactions for Hepatic Function Variables and Porphyrin Determinations Analyzed Continuously.....	K-1
K-2 Summary of Group-by-Covariate Interactions for Hepatic Function Variables and Porphyrin Determinations Analyzed Categorically.....	K-4
K-3 Unadjusted Categorical Exposure Index Analyses for Hepatic Function Variables by Occupation.....	K-5
K-4 Unadjusted Continuous Exposure Index Analyses for Hepatic Function Variables and Two Porphyrin Determinations by Occupation.....	K-8
K-5 Summary of Adjusted Exposure Index, Analyses Involving Interactions with a Continuous Covariate for Hepatic Function Variables.....	K-13
K-6 Summary of Adjusted Exposure Index, Analyses Involving Interactions with a Categorical Covariate for Hepatic Function Variables.....	K-15
K-7 Unadjusted Analyses for Baseline and Interval History of Liver Disease by Group (Verified by Medical Record Review) (Original Comparisons Only).....	K-16
K-8 Unadjusted Analyses of Enlarged Livers Diagnosed at Physical Examination by Group (Original Comparisons Only).....	K-17
K-9 Unadjusted Continuous and Categorical Analyses for Hepatic Function Variables and Two Porphyrin Determinations by Group (Original Comparisons Only).....	K-18
K-10 Adjusted Continuous and Categorical Analyses for Hepatic Function Variables and Two Porphyrin Determinations by Group (Original Comparisons Only).....	K-21
K-11 Summary of Group-by-Covariate Interactions for Hepatic Function Variables (Original Comparisons Only).....	K-27
K-12 Summary of Group-by-Covariate Interactions for Variables and Porphyrin Determinations Analyzed Categorically (Original Comparisons Only).....	K-29

APPENDIX K: Gastrointestinal Assessment (continued)

Contents

<u>Table</u>	<u>Page</u>
K-13 Unadjusted Analysis for Interval History of Skin Bruises, Skin Patches, or Skin Sensitivity by Group (Original Comparisons Only).....	K-30
K-14 Unadjusted Analyses for Porphyrin Abnormalities by Group and Skin Patch, Bruise, or Sensitivity Reported at Followup Questionnaire (Original Comparisons Only).....	K-31
K-15 Unadjusted Analyses for Uroporphyrin Abnormalities by Skin Patch, Bruise, or Sensitivity Reported at Followup Questionnaire and by Group (Original Comparisons Only).....	K-32
K-16 Longitudinal Results for SGOT, SGPT, and GGTP: A Contrast of Baseline and First Followup Examination Test Means (Original Comparisons Only).....	K-33

TABLE K-1.

**Summary of Group-by-Covariate Interactions for Hepatic Function
Variables and Porphyrin Determinations Analyzed Continuously**

Variable	Interaction	Stratification	Statistic	Group		p-Value
				Ranch Hand	Comparison	
SGOT	Group-by- Current Alcohol Use (Drinks/day)	<1	n	652	843	0.889
			Mean	32.2	32.3	
			Adj. Mean	33.4	33.4	
			95% C.I.	(32.4, 34.4)	(32.5, 34.4)	
		1-4	n	275	335	0.010
			Mean	35.3	33.4	
			Adj. Mean	36.5	34.4	
			95% C.I.	(35.1, 38.0)	(33.2, 35.7)	
		>4	n	76	108	0.477
			Mean	37.5	38.1	
			Adj. Mean	38.2	39.4	
			95% C.I.	(35.7, 40.9)	(37.2, 41.8)	
SGPT	Group-by- Current Alcohol Use (Drinks/day)	<1	n	652	843	0.011
			Mean	20.5	21.9	
			Adj. Mean	19.8	21.1	
			95% C.I.	(18.6, 21.2)	(19.8, 22.5)	
		1-4	n	275	335	0.428
			Mean	23.4	22.6	
			Adj. Mean	22.2	21.5	
			95% C.I.	(20.2, 24.3)	(19.7, 23.5)	
		>4	n	76	108	0.058
			Mean	23.9	27.0	
			Adj. Mean	23.3	26.7	
			95% C.I.	(19.7, 27.5)	(22.8, 31.3)	

TABLE K-1. (continued)

**Summary of Group-by-Covariate Interactions for Hepatic Function
Variables and Porphyrin Determinations Analyzed Continuously**

Variable	Interaction	Stratification	Statistic	Group		p-Value
				Ranch Hand	Comparison	
Alkaline Phosphatase	Group-by- Industrial Chemicals	Exposed to Industrial Chemicals	n	504	681	<0.001
			Mean	94.8	89.9	
			Adj. Mean	102.4	97.2	
			95% C.I.	(97.9,107.2)	(93.1,101.5)	
		Not Exposed to Industrial Chemicals	n	499	604	0.973
			Mean	88.9	88.7	
			Adj. Mean	88.5	88.5	
			95% C.I.	(84.9,92.1)	(85.0,92.1)	
LDH	Group-by-Age	Born ≥1942	n	408	547	0.425
			Mean	122.2	121.2	
			Adj. Mean	124.8	123.6	
			95% C.I.	(121.9,127.7)	(121.0,126.3)	
		Born 1923-1941	n	565	691	0.217
			Mean	123.8	125.3	
			Adj. Mean	127.0	128.6	
			95% C.I.	(124.5,129.7)	(126.1,131.1)	
		Born ≤1922	n	36	51	0.966
			Mean	135.1	135.5	
			Adj. Mean	138.9	139.1	
			95% C.I.	(130.8,147.5)	(132.2,146.5)	

TABLE K-1. (continued)

**Summary of Group-by-Covariate Interactions for Hepatic Function
Variables and Porphyrin Determinations Analyzed Continuously**

Variable	Interaction	Stratification	Statistic	Group		p-Value
				Ranch Hand	Comparison	
Trigly- cerides	Group-by-Age	Born ≥ 1942	n	406	546	0.321
			Mean	107.1	110.2	
			Adj. Mean	95.6	99.7	
			95% C.I.	(88.0, 103.9)	(92.5, 107.4)	
		Born 1923-1941	n	561	689	0.784
			Mean	126.0	124.5	
			Adj. Mean	116.8	115.6	
			95% C.I.	(108.6, 125.5)	(108.0, 123.8)	
		Born ≤ 1922	n	36	51	0.039
			Mean	139.0	105.6	
			Adj. Mean	130.7	98.3	
			95% C.I.	(105.4, 161.9)	(81.9, 118.0)	
Uropor- phyrins	Group-by- Blood Urea Nitrogen (BUN)	BUN ≤ 14	n	547	701	<0.001
			Mean	16.2	18.4	
			Adj. Mean	16.3	18.6	
			95% C.I.	(15.4, 17.4)	(17.6, 19.7)	
		BUN > 14	n	453	582	0.686
			Mean	17.8	17.4	
			Adj. Mean	17.9	17.6	
			95% C.I.	(16.8, 19.2)	(16.6, 18.7)	

TABLE K-2.

Summary of Group-by-Covariate Interactions for Hepatic Function Variables
and Porphyrin Determinations Analyzed Categorically

Variable	Interaction	Stratification	Statistic	Group				Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand		Comparison			
				Number	Percent	Number	Percent		
Direct Bilirubin	Group-by-Industrial Chemicals	Exposed to Industrial Chemicals	n	507		683		1.89 (1.05,3.42)	0.035
			High	27	5.3	20	2.9		
			Normal	480	94.7	663	97.1		
		Not Exposed to Industrial Chemicals	n	496		603		0.58 (0.28,1.20)	0.143
			High	11	2.2	23	3.8		
			Normal	485	97.8	580	96.2		
Triglycerides	Group-by-Occupation	Officer	n	376		484		1.77 (1.04,3.01)	0.035
			High	34	9.0	26	5.4		
			Normal	342	91.0	458	94.6		
		Enlisted Flyer	n	177		209		1.27 (0.59,2.71)	0.539
			High	15	8.5	14	6.7		
			Normal	162	91.5	195	93.3		
		Enlisted Groundcrew	n	456		596		0.63 (0.36,1.10)	0.104
			High	19	4.2	39	6.5		
			Normal	437	95.8	557	93.5		

TABLE K-3.

Unadjusted Categorical Exposure Index Analyses for Hepatic Function Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low		Medium		High				
			Number	Percent	Number	Percent	Number	Percent			
SGOT	Officer	n	126		130		120		Overall		0.519
		Abnormal	9	7.1	14	10.8	9	7.5	M vs. L	1.57 (0.65,3.77)	0.384
		Normal	117	92.9	116	89.2	111	92.5	H vs. L	1.05 (0.40,2.75)	0.999
	Enlisted Flyer	n	55		65		57		Overall		0.234
		Abnormal	1	1.8	6	9.2	4	7.0	M vs. L	5.49 (0.64,47.09)	0.123
		Normal	54	98.2	59	90.8	53	93.0	H vs. L	4.08 (0.44,37.67)	0.364
	Enlisted Groundcrew	n	154		160		142		Overall		0.065
		Abnormal	7	4.5	13	8.1	17	12.0	M vs. L	1.86 (0.72,4.79)	0.249
		Normal	147	95.5	147	91.9	125	88.0	H vs. L	2.86 (1.15,7.11)	0.031
SGPT	Officer	n	126		130		120		Overall		0.669
		Abnormal	22	17.5	20	15.4	16	13.3	M vs. L	0.86 (0.44,1.67)	0.736
		Normal	104	82.5	110	84.6	104	86.7	H vs. L	0.73 (0.36,1.46)	0.384
	Enlisted Flyer	n	55		65		57		Overall		0.105
		Abnormal	2	3.6	10	15.4	6	10.5	M vs. L	4.82 (1.01,23.03)	0.037
		Normal	53	96.4	55	84.6	51	89.5	H vs. L	3.12 (0.60,16.17)	0.272
	Enlisted Groundcrew	n	154		160		142		Overall		0.265
		Abnormal	17	11.0	27	16.9	17	12.0	M vs. L	1.64 (0.85,3.14)	0.147
		Normal	137	89.0	133	83.1	125	88.0	H vs. L	1.10 (0.54,2.24)	0.856

TABLE K-3. (continued)

Unadjusted Categorical Exposure Index Analyses for Hepatic Function Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low		Medium		High				
			Number	Percent	Number	Percent	Number	Percent			
GGTP	Officer	n	126		130		120		Overall		0.859
		Abnormal	11	8.7	9	6.9	9	7.5	M vs. L	0.78 (0.31,1.95)	0.646
		Normal	115	91.3	121	93.1	111	92.5	H vs. L	0.73 (0.36,1.46)	0.384
	Enlisted Flyer	n	55		65		57		Overall		0.950
		Abnormal	5	9.1	7	10.8	6	10.5	M vs. L	1.21 (0.36,4.04)	0.999
		Normal	50	90.9	58	89.2	51	89.5	H vs. L	1.18 (0.34,4.10)	0.999
	Enlisted Groundcrew	n	154		160		142		Overall		0.773
		Abnormal	16	10.4	13	8.1	14	9.9	M vs. L	0.76 (0.35,1.64)	0.561
		Normal	138	89.6	147	91.9	128	90.1	H vs. L	0.94 (0.44,2.01)	0.999
Alkaline Phosphatase	Officer	n	126		130		120		Overall		0.448
		Abnormal	4	3.2	7	5.4	3	2.5	M vs. L	1.74 (0.50,6.08)	0.540
		Normal	122	96.8	123	94.6	117	97.5	H vs. L	0.78 (0.17,3.57)	0.999
	Enlisted Flyer	n	55		65		57		Overall		0.258
		Abnormal	1	1.8	5	7.7	5	8.8	M vs. L	4.50 (0.51,39.74)	0.217
		Normal	54	98.2	60	92.3	52	91.2	H vs. L	5.19 (0.59,45.96)	0.206
	Enlisted Groundcrew	n	154		160		142		Overall		0.378
		Abnormal	8	5.2	10	6.3	13	9.2	M vs. L	1.22 (0.47,3.17)	0.810
		Normal	146	94.8	150	93.8	129	90.8	H vs. L	1.84 (0.74,4.58)	0.257

TABLE K-3. (continued)

Unadjusted Categorical Exposure Index Analyses for Hepatic Function Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low		Medium		High				
			Number	Percent	Number	Percent	Number	Percent			
Total Bilirubin	Officer	n	126		130		120		Overall		0.846
		Abnormal	3	2.4	2	1.5	3	2.5	M vs. L	0.64 (0.11,3.90)	0.680
		Normal	123	97.6	128	98.5	117	97.5	H vs. L	1.05 (0.21,5.31)	0.999
	Enlisted Flyer	n	55		65		57		Overall		0.353
		Abnormal	0	0.0	1	1.5	2	3.5	M vs. L	21.58 (0.10,64.65)	0.999
		Normal	55	100.0	64	98.5	55	96.5	H vs. L	5.00 (0.24,106.54)	0.496
	Enlisted Groundcrew	n	154		160		142		Overall		0.374
		Abnormal	7	4.5	3	1.9	6	4.2	M vs. L	0.40 (0.10,1.58)	0.211
		Normal	147	95.5	157	98.1	136	95.8	H vs. L	0.93 (0.30,2.83)	0.999
Direct Bilirubin	Officer	n	126		130		120		Overall		0.327
		Abnormal	2	1.6	5	3.8	6	5.0	M vs. L	2.48 (0.47,13.02)	0.447
		Normal	124	98.4	125	96.2	114	95.0	H vs. L	3.26 (0.65,16.50)	0.164
	Enlisted Flyer	n	55		65		57		Overall		0.624
		Abnormal	2	3.6	5	7.7	3	5.3	M vs. L	2.21 (0.41,11.86)	0.451
		Normal	53	96.4	60	92.3	54	94.7	H vs. L	1.47 (0.24,9.17)	0.999
	Enlisted Groundcrew	n	154		160		142		Overall		0.834
		Abnormal	4	2.6	6	3.8	5	3.5	M vs. L	1.46 (0.40,5.28)	0.750
		Normal	150	97.4	154	96.3	137	96.5	H vs. L	1.37 (0.36,5.20)	0.742

TABLE K-4.

**Unadjusted Continuous Exposure Index Analyses for Hepatic Function Variables
and Two Porphyrin Determinations by Occupation**

Variable	Occupation	Statistic	Exposure Index			Contrast	p-Value
			Low	Medium	High		
SGOT	Officer	n	126	130	120	Overall	0.695
		Mean	33.3	34.5	33.8	M vs. L	0.400
		95% C.I.	(31.5,35.3)	(32.6,36.5)	(31.9,35.8)	H vs. L	0.757
	Enlisted Flyer	n	55	65	57	Overall	0.289
		Mean	30.9	33.3	33.2	M vs. L	0.151
		95% C.I.	(28.5,33.4)	(31.0,35.8)	(30.7,35.8)	H vs. L	0.192
	Enlisted Groundcrew	n	154	160	142	Overall	0.418
		Mean	32.9	33.2	34.4	M vs. L	0.801
		95% C.I.	(31.4,34.5)	(31.7,34.8)	(32.8,36.1)	H vs. L	0.211
SGPT	Officer	n	126	130	120	Overall	0.712
		Mean	22.5	22.1	21.3	M vs. L	0.804
		95% C.I.	(20.5,24.6)	(20.2,24.2)	(19.4,23.39)	H vs. L	0.421
	Enlisted Flyer	n	55	65	57	Overall	0.061
		Mean	18.5	21.9	22.0	M vs. L	0.037
		95% C.I.	(16.4,20.8)	(19.7,24.5)	(19.6,24.7)	H vs. L	0.041
	Enlisted Groundcrew	n	154	160	142	Overall	0.495
		Mean	20.9	22.3	21.5	M vs. L	0.237
		95% C.I.	(19.3,22.6)	(20.7,24.1)	(19.9,23.4)	H vs. L	0.595

TABLE K-4. (continued)

**Unadjusted Continuous Exposure Index Analyses for Hepatic Function Variables
and Two Porphyrin Determinations by Occupation**

Variable	Occupation	Statistic	Exposure Index			Contrast	p-Value
			Low	Medium	High		
GGTP	Officer	n	126	130	120	Overall	0.885
		Mean	31.4	32.7	32.6	M vs. L	0.653
		95% C.I.	(27.8,35.5)	(29.0,36.9)	(28.7,36.9)	H vs. L	0.688
	Enlisted Flyer	n	55	65	57	Overall	0.243
		Mean	29.7	34.9	37.1	M vs. L	0.225
		95% C.I.	(24.6,35.9)	(29.3,41.5)	(30.8,44.7)	H vs. L	0.104
	Enlisted Groundcrew	n	154	160	142	Overall	0.412
		Mean	34.7	33.0	31.1	M vs. L	0.527
		95% C.I.	(31.1,38.7)	(29.6,36.7)	(27.8,34.9)	H vs. L	0.183
Alkaline Phosphatase	Officer	n	126	130	120	Overall	0.735
		Mean	87.2	86.8	88.9	M vs. L	0.893
		95% C.I.	(83.5,91.1)	(83.2,90.6)	(85.0,92.9)	H vs. L	0.546
	Enlisted Flyer	n	55	65	57	Overall	0.189
		Mean	88.9	96.3	95.2	M vs. L	0.086
		95% C.I.	(83.1,95.0)	(90.5,102.4)	(89.1,101.6)	H vs. L	0.153
	Enlisted Groundcrew	n	154	160	142	Overall	0.535
		Mean	93.2	95.1	96.2	M vs. L	0.484
		95% C.I.	(89.7,96.9)	(91.5,98.8)	(92.4,100.2)	H vs. L	0.270

TABLE K-4. (continued)

**Unadjusted Continuous Exposure Index Analyses for Hepatic Function Variables
and Two Porphyrin Determinations by Occupation**

Variable	Occupation	Statistic	Exposure Index			Contrast	p-Value
			Low	Medium	High		
Total Bilirubin	Officer	n	126	130	120	Overall	0.382
		Mean	0.76	0.73	0.77	M vs. L	0.324
		95% C.I.	(0.72,0.80)	(0.69,0.77)	(0.73,0.81)	H vs. L	0.722
	Enlisted Flyer	n	55	65	57	Overall	0.045
		Mean	0.66	0.73	0.76	M vs. L	0.092
		95% C.I.	(0.61,0.72)	(0.67,0.78)	(0.70,0.83)	H vs. L	0.014
	Enlisted Groundcrew	n	126	130	120	Overall	0.373
		Mean	0.74	0.75	0.78	M vs. L	0.783
		95% C.I.	(0.70,0.78)	(0.71,0.78)	(0.74,0.82)	H vs. L	0.182
Direct Bilirubin	Officer	n	126	130	120	Overall	0.606
		Mean	0.18	0.17	0.19	M vs. L	0.484
		95% C.I.	(0.17,0.21)	(0.16,0.19)	(0.17,0.21)	H vs. L	0.784
	Enlisted Flyer	n	55	65	57	Overall	0.684
		Mean	0.16	0.18	0.18	M vs. L	0.455
		95% C.I.	(0.14,0.20)	(0.15,0.21)	(0.15,0.21)	H vs. L	0.440
	Enlisted Groundcrew	n	126	130	120	Overall	0.541
		Mean	0.17	0.15	0.19	M vs. L	0.277
		95% C.I.	(0.15,0.19)	(0.17,0.20)	(0.16,0.19)	H vs. L	0.728

TABLE K-4. (continued)

Unadjusted Continuous Exposure Index Analyses for Hepatic Function Variables
and Two Porphyrin Determinations by Occupation

Variable	Occupation	Statistic	Exposure Index			Contrast	p-Value
			Low	Medium	High		
LDH	Officer	n	126	130	120	Overall	0.489
		Mean	125.1	124.2	121.8	M vs. L	0.742
		95% C.I.	(121.2,129.1)	(120.4,128.1)	(117.9,125.8)	H vs. L	0.246
	Enlisted Flyer	n	55	65	57	Overall	0.118
		Mean	120.2	117.6	126.2	M vs. L	0.533
		95% C.I.	(114.4,126.4)	(112.4,123.3)	(120.2,132.5)	H vs. L	0.175
	Enlisted Groundcrew	n	154	160	142	Overall	0.031
		Mean	123.1	122.3	127.9	M vs. L	0.710
		95% C.I.	(120.1,126.2)	(119.4,125.3)	(124.6,131.2)	H vs. L	0.037
Cholesterol	Officer	n	126	130	120	Overall	0.122
		Mean	220.7	211.8	210.7	M vs. L	0.093
		95% C.I.	(213.3,228.3)	(204.8,219.0)	(203.5,218.2)	H vs. L	0.063
	Enlisted Flyer	n	55	65	57	Overall	0.203
		Mean	221.1	213.9	227.7	M vs. L	0.351
		95% C.I.	(210.2,232.6)	(204.2,224.2)	(216.6,239.3)	H vs. L	0.418
	Enlisted Groundcrew	n	154	160	142	Overall	0.873
		Mean	211.4	211.1	213.3	M vs. L	0.984
		95% C.I.	(205.4,217.6)	(205.2,217.2)	(207.0,219.8)	H vs. L	0.677

TABLE K-4. (continued)

**Unadjusted Continuous Exposure Index Analyses for Hepatic Function Variables
and Two Porphyrin Determinations by Occupation**

Variable	Occupation	Statistic	Exposure Index			Contrast	p-Value
			Low	Medium	High		
Triglycerides	Officer	n	126	130	120	Overall	0.624
		Mean	114.2	117.9	125.1	M vs. L	0.728
		95% C.I.	(100.2,130.1)	(103.8,134.1)	(109.5,142.9)	H vs. L	0.338
	Enlisted Flyer	n	55	65	57	Overall	0.953
		Mean	123.8	119.9	123.1	M vs. L	0.775
		95% C.I.	(105.2,145.7)	(103.2,139.3)	(104.9,144.5)	H vs. L	0.811
	Enlisted Groundcrew	n	154	160	142	Overall	0.796
		Mean	118.7	113.8	117.9	M vs. L	0.528
		95% C.I.	(108.1,130.3)	(103.9,124.7)	(107.0,129.9)	H vs. L	0.919

TABLE K-5.

Summary of Adjusted Exposure Index, Analyses Involving Interactions with a Continuous Covariate for Hepatic Function Variables

Variable	Occupation	Interaction Covariate	p-Value Interaction	Exposure Index Level	Slope	p-Value on Test of Slope Against Null Hypothesis of Zero Slope
SGOT	Enlisted Flyer	Current Alcohol Use	<0.001	Low	-0.012	0.266
				Medium	0.068	0.004
				High	0.029	0.138
SGOT	Enlisted Groundcrew	Current Alcohol Use	<0.001	Low	0.004	0.628
				Medium	0.047	<0.001
				High	0.062	<0.001
SGPT	Enlisted Groundcrew	Current Alcohol Use	0.006	Low	-0.026	0.097
				Medium	0.027	0.189
				High	0.071	0.013
GGTP	Enlisted Flyer	Current Alcohol Use	0.003	Low	0.022	0.455
				Medium	0.183	<0.001
				High	0.154	0.006
GGTP	Enlisted Groundcrew	Current Alcohol Use	0.009	Low	0.035	0.129
				Medium	0.091	<0.001
				High	0.170	<0.001
Direct Bilirubin	Enlisted Flyer	Current Alcohol Use	0.017	Low	0.013	0.445
				Medium	0.097	<0.001
				High	0.065	0.090
Cholesterol	Enlisted Groundcrew	Current Alcohol Use	0.006	Low	0.003	0.591
				Medium	-0.008	0.285
				High	0.033	0.002

TABLE K-5. (continued)

Summary of Adjusted Exposure Index, Analyses Involving Interactions with a Continuous Covariate for Hepatic Function Variables

Variable	Occupation	Interaction Covariate	p-Value Interaction	Exposure Index Level	Slope	p-Value on Test of Slope Against Null Hypothesis of Zero Slope
LDH	Enlisted Groundcrew	Current Alcohol Use	0.025	Low	-0.005	0.322
				Medium	0.016	0.020
				High	0.003	0.728
Triglycerides	Enlisted Flyer	Age	0.012	Low	0.014	0.286
				Medium	0.015	0.247
				High	0.038	0.032

TABLE K-6.

Summary of Adjusted Exposure Index, Analyses Involving Interactions with a Categorical Covariate for Hepatic Function Variables

Variable	Occupation	Interaction Covariate	Stratification	Exposure Index Level	Adjusted Mean (n)	Interaction p-Value
Total Bilirubin	Enlisted Groundcrew	Race	Black	Low	0.63 (14)	0.007
				Medium	0.90 (13)	
				High	0.70 (13)	
			Nonblack	Low	0.75 (138)	
				Medium	0.73 (147)	
				High	0.80 (127)	

TABLE K-7.

Unadjusted Analyses for Baseline and
Interval History of Liver Disease by Group
(Verified by Medical Record Review)
(Original Comparisons Only)

Disease	Statistic	Group				Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand		Comparison			
		Number	Percent	Number	Percent		
Hepatitis (Viral and Alcoholic)	n	1,016		955		1.02 (0.64,1.65)	0.999
	Yes	37	3.6	34	3.6		
	No	979	96.4	921	96.4		
Jaundice	n	1,016		955		0.89 (0.48,1.66)	0.754
	Yes	20	2.0	21	2.2		
	No	996	98.0	934	97.8		
Cirrhosis	n	1,016		955		2.83 (0.29,27.21)	0.625
	Yes	3	0.5	1	0.1		
	No	1,013	99.5	954	99.9		
Enlarged Liver	n	1,016		955		1.07 (0.53,2.15)	0.999
	Yes	17	1.7	15	1.6		
	No	999	98.3	940	98.4		
Miscellaneous Liver Disorders	n	1,016		955		2.31 (0.95,5.58)	0.065
	Yes	17	1.7	7	0.7		
	No	999	98.3	948	99.3		

TABLE K-8.

**Unadjusted Analyses of Enlarged Livers
Diagnosed at Physical Examination by Group*
(Original Comparisons Only)**

Group	Enlarged Liver				Total	p-Value
	Yes		No			
	Number	Percent	Number	Percent		
Ranch Hand	8	0.8	1,002	99.2	1,010	0.227
Original Comparison	3	0.3	950	99.7	953	

*Excludes participants with positive HB_sAg.

TABLE K-9.

Unadjusted Continuous and Categorical Analyses for Hepatic Function Variables
and Two Porphyrin Determinations by Group
(Original Comparisons Only)

Variable	Statistic	Group		Original Comparison	Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand				
SGOT	n	1,009		952	—	0.903
	Mean	33.5		33.4		
	95% C.I.	(32.9,34.1)		(32.8,34.0)		
	Number/%				0.94 (0.68,1.30)	0.701
	Normal	929	92.1%	872 91.6%		
High	80	7.9%	80 8.4%			
SGPT	n	1,009		952	—	0.060
	Mean	21.6		22.5		
	95% C.I.	(21.0,22.3)		(21.8,23.2)		
	Number/%				0.94 (0.73,1.22)	0.651
	Normal	872	86.4%	816 85.7%		
High	137	13.6%	136 14.3%			
GGTP	n	1,009		952	—	0.921
	Mean	32.8		32.7		
	95% C.I.	(31.4,34.3)		(31.3,34.2)		
	Number/%				0.94 (0.69, 1.28)	0.682
	Normal	919	91.1%	862 90.6%		
High	90	8.9%	90 9.4%			
Alkaline Phosphatase	n	1,009		952	—	0.044
	Mean	91.8		89.7		
	95% C.I.	(90.4,93.3)		(88.3,91.2)		
	Number/%				1.31 (0.87,1.97)	0.205
	Normal	953	94.5%	911 95.7%		
High	56	5.5%	41 4.3%			